

DEC 13 2016 THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

RECEIVED

AMERICAN RAILCAR INDUSTRIES, INC.

Petitioner,

v.

SARAH E. FEINBERG, Administrator
U.S. Federal Railroad Administration,

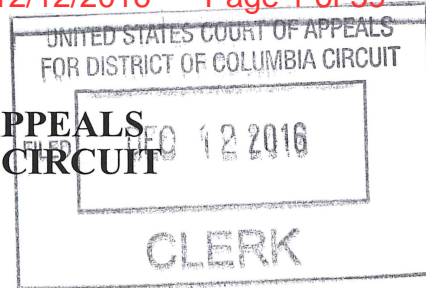
And

ROBERT C. LAUBY, Associate Administrator
For Railroad Safety
AND THE FEDERAL RAILROAD
ADMINISTRATION

Respondents.

Case No.

16-1420



PETITION FOR REVIEW

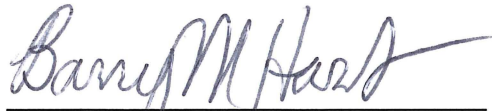
American Railcar Industries, Inc. hereby petitions this Court, pursuant to section 7123(b) of the Hazardous Materials Transportation Act as amended, 49 USC §5127(a) and Rule 15(a) of the Federal Rules of Appellate Procedure, to review, remand and vacate, defer enforcement of, and/or stay pending review, the Railroad Worthiness Directive No. 2016-01, issued on September 30, 2016, and “revised and superseded” on November 18, 2016, copies of which are attached as Exhibit A. A request for reconsideration of the Directive was filed on November 28, 2016. The Respondents did not rule on the request and it was withdrawn on

December 12, 2016. (Exhibit B). A request seeking a stay of the Directive pending judicial review was made on November 28, 2016 and again on December 13, 2016 (Exhibit B), but Respondents have not acted on those requests.

Respectfully submitted,

K&L GATES LLP

December 13, 2016



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CERTIFICATE OF SERVICE

I hereby certify that on the 13th day of December, 2016, a copy of the foregoing Petition for Review was served by hand delivery, upon the following persons:

Sarah E. Feinberg, Administrator
Robert C. Lauby, Associate Administrator for Railroad
Safety
Sarah Inderbitzin, Acting Chief Counsel
U.S. Federal Railroad Administration
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Washington, DC 20590

The Honorable Loretta Lynch, Attorney General
Benjamin C. Mizer,
Principal Deputy Assistant Attorney General,
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A handwritten signature in blue ink, reading "Sarah M. Mason", is written over a horizontal line. The signature is stylized with a large, looped 'S' and a long horizontal stroke extending to the right.

Exhibit A

**UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
RAILWORTHINESS DIRECTIVE (RWD)
RWD No. 2016-01**

This document is an FRA Railworthiness Directive (Directive) issued under 49 C.F.R. § 180.509(b)(4). FRA is issuing this Directive to all owners of Department of Transportation (DOT) specification 111 general purpose tank cars. FRA is issuing this directive based on its finding that as a result of non-conforming welding practices, DOT-111 tank cars built by American Railcar Industries, Inc. (ARI) and ACF Industries, LLC (ACF) between 2009 and 2015 to the ARI and ACF 300 stub sill design and equipped with a two piece cast sump and bottom outlet valve (BOV) skid may be in an unsafe operating condition and could result in the release of hazardous materials. As a result of non-conforming welding practices, these cars may have substantial weld defects at the sump and BOV skid groove attachment welds, potentially affecting each tank's ability to retain its contents during transportation. Further, the use of tank cars with the defective welds identified violates the requirements of the Federal Hazardous Materials regulations (HMR; 49 CFR parts 171-180).¹ FRA is issuing this Directive to ensure public safety, ensure compliance with the applicable Federal regulations governing the safe movement of hazardous materials by rail, and ensure the railworthiness² of the tank cars. This Directive requires owners to: (1) identify tank cars in their fleet covered by this Directive; and (2) ensure appropriate inspection and testing of each tank car's sump and BOV skid groove attachment welds to ensure no flaw exists which could result in the loss of tank integrity.

¹ See 49 CFR § 179.200-10.

² 49 CFR § 180.503.

I. BACKGROUND

On May 9, 2014, Canadian Pacific Railway (CP) notified FRA of tank car CTCX 736177, leaking denatured alcohol (ethanol) in CP's Bensenville Yard in Franklin Park, Illinois. Tank car CTCX 736177 is a 30,000 gallon specification DOT 111A100W-1 non-coiled, non-insulated, general purpose tank car manufactured for the transportation of Class 3 flammable liquids and owned by The CIT Group/Equipment Financing Inc. (CIT). ARI manufactured the tank car in its Marmaduke, Arkansas facility in May 2012, to the company's ARI 300 stub sill design.³ CP contacted an environmental response company, SUNPRO, Inc., who applied an epoxy patch to stop the leak. On May 10, 2014, FRA personnel inspected the car and found the patched area between the cast sump and BOV skid halves on the bottom of the tank. At CIT's direction, on May 29, 2014, SUNPRO transferred tank car CTCX 736177's lading into another tank car and CP moved tank car CTCX 736177 to the Greenbrier Rail Services' (Greenbrier) Atchison, Kansas, repair facility for further inspection. Greenbrier inspected the sump and BOV skid groove attachment weld joints using liquid penetrant, ultrasonic, and visual inspection nondestructive testing (NDT) methods. During the inspection at Greenbrier's facility, representatives of CIT, ARI, FRA, and Greenbrier identified defects in the groove attachment welds at the sump and BOV skid, including small pinholes (porosity), incomplete joint fusion, incomplete joint penetration, and cracks.

Design drawings require the groove attachment welds joining the tank shell plate, the cast sump, and the cast BOV skid, to be full penetration and full fusion (i.e., the junction between the tank shell plate, skid casting, and BOV flange must be completely

³ The 300 designation is a stub sill design style classification the AAR Tank Car Committee assigned to certain ARI and ACF manufactured tank cars.

fused (melted) together, creating a solid barrier capable of holding the contents of the tank). The defects FRA detected ranged from 2-1/2-inches to over 17-1/2-inches long and up to 3/8-inch deep.

Subsequently, CIT sent the tank car to ARI's repair facility in North Kansas City, Missouri. There, ARI removed the segment of the weld containing the defects and additional tank shell material containing the sump casting, the BOV skid casting, and the groove attachment welds, and sent the section to ESI in Aurora, Illinois, for metallurgical analysis.

ESI's analysis identified large pockets of trapped oxides (slag) starting just below the interior weld surface and extending almost completely through the weld thickness. For the failed welds on tank car CTCX 736177, the only way slag pockets (or slag inclusions) could form is if a welder does not follow appropriate welding practices during welding by failing to thoroughly clean and visually inspect every weld pass before depositing the next weld pass as the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180)⁴ and AAR's Tank Car Manual⁵ require. The slag pockets prevented the complete fusion of the joint between the tank plate and the castings and produced the porosity and lack of fusion observed. Over time, these defects initiated and propagated cracks in the welds resulting in the tank leaking.

The HMR require all weld joints on tank car tanks to be fusion-welded in compliance with the requirements of the Tank Car Manual. For attachment welds to the tank, the Tank Car Manual requires the welder producing the welds to visually inspect the first pass and each layer of multi-pass welds to ensure each pass is free from cracks,

⁴ See 49 CFR § 179.200-10.

⁵ AAR Manual of Standards and Recommended Practices, Section C-III, Specifications for Tank Cars (November 2014) (Tank Car Manual), at Appendix W.

overlap, incomplete fusion, and slag inclusions before depositing the next pass. To perform the required visual inspections properly the welder must thoroughly clean and inspect each pass before depositing the next pass. The presence of the slag pockets ESI identified in the groove attachment welds on tank car CTCX 736177 demonstrates the welder who deposited them did not follow these requirements.

Based on this incident, using ultrasonic testing techniques, CIT voluntarily inspected 386 additional tank cars in its fleet constructed to the same ARI 300 and ACF 300 design and equipped with a two-piece cast sump and BOV skid (sister cars). Approximately 15 percent of the sister cars inspected had the same defects as those identified in CTCX 736177, ranging from ½-inch to 22-inches long and from 1/8-inch to 0.39-inches deep. The approved tank car arrangement design drawings require welds to be either 7/16-inch or ½-inch thick at these locations. In other words, the slag pockets in the sump and BOV skid groove attachment welds of some sister cars were almost as deep as the welds were thick, resulting in less than full fusion of the weld joint (and meaning the welds were almost hollow). Welds with such extensive amounts of slag and incomplete fusion are not likely to withstand the design stresses and in-train forces they will encounter. Over time, these conditions will initiate and propagate cracks, either partially or completely through the weld, as occurred with tank car CTCX 736177.

FRA's review of CIT's inspection and test records of the sister cars revealed similar defects to those found in the attachment groove welds of tank car CTCX 736177 in cars welded by six other welders, not just the welder of CTCX 736177. Therefore, FRA concludes other welders assigned to make the attachment groove welds did not properly clean and inspect the welds during the manufacturing process. FRA also believes the single bevel groove weld joint design for these welds that allowed the slag to

accumulate at the root of the welds and along the walls of the tank plate, sump, and BOV skid castings made cleaning and inspecting the welds more difficult, and contributed to the defects in the welds.

Based on information provided by ARI, FRA understands between 2009 and 2015, ARI and ACF together manufactured approximately 14,800 general purpose tank cars to the same 300 stub sill design with the same two-piece cast sump and BOV skid weld design.⁶ Accordingly, FRA believes the defects causing the leak in CTCX 736177 are likely to be in many of the 14,800 tank cars produced.

II. DIRECTIVE

Upon the date of issuance of this Directive, tank car owners must:

1. Identify the railroad tank cars in their fleet manufactured by ARI or ACF to the ARI 300 or ACF 300 stub sill design and equipped with a two-piece cast sump and BOV skid and provide to FRA within 30 days of the issuance of this Directive, the reporting mark and number of each car. Before offering a tank car for transportation under the conditions of this Directive, the tank car owner or other offeror of the car, shall ensure there is no visible leak from the BOV saddle and sump weld areas, the car complies with all applicable regulatory requirements, and is in a safe condition for transportation. Each time a car subject to this Directive is offered into transportation, this visual inspection of the BOV saddle and sump weld area must be performed to ensure there is no visible leak from the BOV saddle or sump weld areas. The person performing the inspection must document the inspection and provide a copy of the inspection results

⁶ ARI changed the sump and BOV skid groove attachment weld design in 2015 as a result of the incident with CTCX 736177.

to the tank car owner within 30 days of the inspection. Tank car owners must maintain the records of these inspections for 10 years.

2. Inspect and test the sump and BOV skid groove attachment welds as follows:

a. Facilities. All inspections and tests required by this Directive (other than the visual inspection required by paragraph 1 above) must be performed by tank car facilities (defined at 49 CFR 179.2) certified by the AAR consistent with Appendix B of the Tank Car Manual. (Appendix B provides the requirements for tank car facilities to obtain AAR certification.)

b. Procedures. Due to the subsurface location of the identified slag inclusions and related cracks, volumetric inspection methods (ultrasonic testing), must be used in conjunction with surface inspection methods (liquid penetrant, magnetic particle and visual inspection) to ensure the welds are completely examined.

i. All NDT, including visual inspection, must be performed consistent with written procedures described in Appendix T, paragraph 1.18 of the Tank Car Manual and approved by an individual qualified and certified as a Level III in the NDT method. (Appendix T provides the requirements for qualification and certification of NDT procedures and personnel for tank cars.)

ii. All NDT procedures and techniques used, including procedures for visual inspection, must be capable of locating, interpreting, evaluating, and sizing cracks, incomplete penetration, incomplete fusion, and slag inclusions to a level of sensitivity and reliability of 90% (90% probability of detection).⁷ Ultrasonic testing methods and

⁷ Probability of detection is a quantitative measure of the likelihood of finding defects of a specific type and size resulting from statistics-based detection experiments using actual or engineered flaw sets, see *Department of Defense Handbook Nondestructive Evaluation System Reliability Assessment MIL-HDBK-1823A* (2009).

techniques used must allow for clearance around internal attachments adequate to perform longitudinal and transverse wave scanning, including procedures for phased array ultrasonic testing, if used.

c. Personnel. All personnel, including subcontractors, reviewing and approving NDT procedures and reports, including visual inspections, must be qualified and certified to Level II or Level III consistent with Appendix T of the Tank Car Manual and the tank car facility's written practice.

i. In addition to the requirements of Paragraph c. above, all personnel performing NDT on these welds, and reviewing procedures and reports, including subcontractor personnel, must be trained and tested on the procedures to be used and samples representing the welds to be inspected consistent with 49 CFR part 172, subpart H, and Appendix T of the Tank Car Manual.

d. Acceptance Criteria. Interpretations and evaluations of inspections and tests shall comply with Appendix W of the Tank Car Manual.

e. Records. All inspection and test results must be documented, including re-inspections of repairs. The documentation must include the information described in Appendix T, paragraph 1.20 of the Tank Car Manual including the additional reporting requirements of Appendix T for the applicable NDT methods(s) chosen.

i. A separate record must be completed for each inspection and test performed on each tank car.

ii. The results of ultrasonic testing inspections must be recorded digitally and maintained with the inspection and test record.

iii. In addition to the record retention periods required by Chapter 1 of the Tank Car Manual for tank car facilities, the tank car owner must retain all records and

documentation required by this Directive for 10 years following the completion of the inspections and tests.

f. Schedule. The inspections and tests required by this Directive must be performed according to the following schedule:

i. Within 12 months from the date of issuance of this Directive for tank cars in hazardous materials service;

ii. Within 18 months from the date of issuance of this Directive for tank cars in non-hazardous materials service;

iii. Within 24 months from the date of issuance of this Directive for tank cars returning to service or withdrawn from storage and placed in hazardous or non-hazardous materials service prior to loading;

iv. Tank cars not inspected and tested according to this Directive may not be loaded and/or offered into transportation until they are inspected and tested in accordance with this Directive;

v. Tank car owners must include the results of the inspections and tests required by this Directive in the analysis of its qualification and maintenance program at the intervals required by 49 CFR 180.501 and 180.509;

vi. Within 60 days of the issuance of this Directive, each owner of a tank car subject to this Directive must notify all parties under contract to the car owner, including its lessees and/or sub-lessees, using the cars covered by the Directive of the terms of this Directive and the inspection and testing schedule.

g. Reports. Owners of tank cars subject to this Directive must report the inspection, test, and repair information to FRA as follows:

- i. Tank car reporting mark(s) and number(s) of tank cars in an owner's fleet identified under paragraph (1) of this Directive;
- ii. Planned inspection and test schedule for each tank car identified under paragraph (1) of this Directive, by reporting mark and number;
- iii. Tank car facility (station stencil) that performed the inspection(s) and test(s);
- iv. Date(s) the inspection(s) and test(s) were performed;
- v. Inspection and test method(s) and procedure number(s) used;
- vi. Name(s) of inspector(s) performing the inspection(s) and test(s), level(s) of certification(s), and method(s) certified;
- vii. Inspection and test results;
- viii. Corrective (repair) action(s) taken; and
- ix. The type and date of any accidents, incidents, or releases from the tank car related to the welds that are the subject of this Directive.

The information may be submitted in written hardcopy format or sent electronically to: Larry Strouse, General Engineer, Hazardous Materials Division, Office of Technical Oversight, FRA, 200 W. Adams Street, Suite 310, Chicago, Illinois, 60606, (312) 353-6203, email: Larry.Strouse@dot.gov. FRA must receive initial reports by October 30, 2016 and subsequent status updates every 90 days thereafter.

- h. Repairs. Prior to initiating any repairs, a tank car facility must obtain the tank car owner's written permission and approval of the qualification and maintenance program the tank car facility will use consistent with Appendices D, R, and W of the Tank Car Manual and 49 CFR § 180.513. A tank car facility must report all work

performed and all observed damage, deterioration, failed components, or noncompliant parts to the owner under 49 CFR § 180.513.

FRA will continue to monitor the performance of the tank cars subject to this Directive in hazardous materials service and will take all necessary regulatory or enforcement action to ensure the highest level of safety on the Nation's railroads is maintained. Regardless of any entity's compliance with this Directive, FRA reserves the right to seek civil penalties or to take any other appropriate enforcement action for violations of the HMR that have occurred.

III. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires FRA to consider the impact of paperwork and other information collection burdens imposed on the public. FRA has determined that this Railworthiness Directive imposes new information collection requirements. FRA will be publishing a Paperwork Reduction Act notice for comment, following publication of this Directive.

IV. Agency Contact For Questions

If you have any questions concerning this Directive, contact Larry Strouse, General Engineer, Hazardous Materials Division, Office of Technical Oversight, FRA, 200 W. Adams Street, Suite 310, Chicago, Illinois 60606, (312) 353-6203, Larry.Strouse@dot.gov.

Dated:



for Robert C. Lauby,
Associate Administrator for Railroad Safety
Chief Safety Officer

UNITED STATES DEPARTMENT OF TRANSPORTATION**FEDERAL RAILROAD ADMINISTRATION****RAILWORTHINESS DIRECTIVE (RWD)****RWD No. 2016-01 [REVISED]**

This Revised Directive revises and supersedes FRA's Railworthiness Directive No. 2016-01 (Directive), issued on September 30, 2016. FRA is issuing this Revised Directive under 49 CFR 180.509(b)(4). This Revised Directive addresses concerns and requests for clarification FRA received from affected parties since it issued the original Directive. The revisions this Revised Directive makes are discussed in Section II below and the actual revisions to the Directive are in Section III below.

I. Background

FRA issued the Directive based on its finding that as a result of non-conforming welding practices, DOT-111 tank cars built by American Railcar Industries, Inc. (ARI) and ACF Industries, LLC (ACF) between 2009 and 2015 to the ARI and ACF 300 stub sill design and equipped with a two-piece cast sump and bottom outlet valve (BOV) skid may be in an unsafe operating condition and could result in the release of hazardous materials. As a result of non-conforming welding practices, FRA concluded these cars may have substantial weld defects at the sump and BOV skid groove attachment welds, potentially affecting each tank's ability to retain its contents during transportation. Further, FRA found using the tank cars with the defective welds identified violates the requirements of the Federal Hazardous Materials regulations (HMR; 49 CFR parts 171–180).¹ A more detailed background discussion is in the Directive.

¹ See 49 CFR 179.200-10.

Generally, this Revised Directive requires tank car owners to: (1) identify tank cars in their fleet covered by the Revised Directive (covered cars); and (2) implement specific inspection and testing procedures to ensure no flaws exist in each tank car's sump and BOV skid groove attachment welds which could result in the loss of tank integrity. Specifically, this Revised Directive requires offerors of covered cars, before offering those cars into transportation, to visually inspect the BOV saddle and sump area to ensure there is no visible leak from those areas. This Revised Directive also requires each tank car owner to identify covered cars in hazardous materials service as of the issuance date of this Revised Directive and of those cars, ensure a 15% sample are inspected and tested by qualified personnel at tank car facilities within 12 months. The Revised Directive requires tank car facilities to use both volumetric inspection methods (ultrasonic testing) and surface inspection methods (e.g., liquid penetrant, magnetic particle or visual inspection) to ensure the welds at issue are completely examined. The Revised Directive also requires the nondestructive testing (NDT) methods used to be able to locate, interpret, evaluate, and size cracks, incomplete penetration, incomplete fusion, and slag inclusions to a level of sensitivity and reliability of 90% probability of detection (POD).

This Revised Directive also modifies certain recordkeeping requirements of the original Directive.

II. ARI and ACF Concerns With Directive and Requests for Modification

In letters, ARI and ACF expressed concerns with the Directive and asked FRA to reconsider certain requirements. Specifically, in its October 7, 2016, letter, ARI: (1) asked FRA to extend the effective date of the Directive 30 days; (2) indicated some

requirements of the Directive “appear to be impractical and confusing”; and (3) questioned the legality of some Directive requirements. In its October 13, 2016, letter, ACF asked FRA to reconsider including ACF-manufactured cars in the Directive, noting ARI had manufactured the failed tank car (CTCX 736177) and asserting no evidence exists that ACF-manufactured tank cars have the same weld conditions as CTCX 736177.

In ARI’s October 14 and 27, 2016, letters, ARI asserted that the Directive imposed “unattainable standards for inspection and testing” due to the timeline for completing the required inspections and the requirement for inspection and testing to be conducted to a 90% POD. ARI asked FRA to amend the Directive to allow use of “currently accepted industry inspection” methodologies and asserted that even if FRA did allow the use of currently accepted inspection methodologies, due to capacity constraints at the nation’s approximately 70 tank car shops, industry would need 5 years (until the end of 2021) to complete the inspections the Directive requires. ARI further asserted that by applying the Directive to cars already voluntarily inspected by ARI, Association of American Railroads (AAR) Specification 211 (AAR 211) cars, and cars currently in storage, FRA is applying the Directive to an overly broad class of cars. Accordingly, ARI recommended removal of the Directive’s recordkeeping requirement related to the required pre-transportation visual inspection of the BOV saddle and weld area. ARI also expressed concern regarding the Directive’s requirement to keep the results of ultrasonic testing inspections digitally and to train personnel reviewing, approving, and performing the inspections and tests required under the Directive. Finally, ARI asserted FRA lacks an objective justification for the Directive. In support of its assertions, ARI provided

FRA a summary report of its inspection results from 321 field inspections of cars built to the ARI 300 stub sill design and a summary of ARI's stress and fatigue analysis completed on the bottom fitting weld attachments of the cars.²

1. Effective Date.

FRA is extending the first deadline in this Revised Directive by more than 30 days from that of the original Directive to the date this Revised Directive is issued to provide stakeholders additional time to address technical and administrative issues regarding elements of the Directive that required clarification, as well as to provide necessary time to develop and distribute weld inspection procedures that meet the minimum criteria of the Directive.

2. Scope of Cars Subject to the Directive.

ARI and ACF expressed four concerns regarding the scope of cars subject to the Directive. First, noting that ACF manufactured 10% of the tank cars subject to the Directive, ARI and ACF asserted there is no evidence the ACF-manufactured tank cars have the same sump and BOV skid groove attachment weld conditions found in CTCX 736177 or other ARI-manufactured cars. Second, ARI noted that together with CIT Group Inc. (CIT Group Inc. owns a fleet of ARI-manufactured tank cars built to the ARI 300 stub sill design and equipped with a two-piece cast sump and BOV skid), ARI has already voluntarily inspected approximately 750³ ARI-manufactured cars "without finding any leaks or cracks." Third, ARI and ACF expressed concern with the

² ARI, Summary Report on ARI Tank Cars built with Sump and Bottom Outlets, 2009-2015, ARI Report 1601 (Oct. 7, 2016).

³ Based on the latest information ARI has provided, FRA understands that to date, ARI and CIT have inspected approximately 900 ARI-manufactured tank cars built to the ARI-300 stub sill design.

Directive's requirement to inspect out-of-service cars within 24 months. Fourth, ARI recommended removal of AAR 211 tank cars from the scope of the Directive.

FRA understands ARI and ACF's concerns, and the concerns of other industry participants dependent on having an ample supply of tank cars to meet their transportation needs.⁴ FRA believes the failure of tank car CTCX 736177, and the defective weld conditions identified in a large number of ARI-manufactured cars of the same design, demonstrate the need to ensure all cars built to this particular design are inspected and repaired, as necessary, as soon as practicable. Nevertheless, FRA believes ARI and ACF's concerns about the scope of cars covered by the Directive and the Directive's recordkeeping requirements related to the required pre-trip visual inspection are valid. Accordingly, in this Revised Directive, FRA is revising aspects of the Directive to address these concerns and practical issues.

In response to ARI and ACF's concerns regarding ACF-manufactured tank cars, in this Revised Directive, FRA is implementing a sample inspection program for ACF tank cars to gather additional data to determine if this group of cars should be removed from the scope of the Revised Directive. FRA is also implementing a representative sampling program of the approximately 900 cars CIT and ARI have already voluntarily inspected. These sampling programs may provide data sufficient to exempt these groups of cars from the Revised Directive. However, the minimum inspection criteria of the Directive are different from the criteria ARI and CIT used to voluntarily examine tank cars prior to issuance of the Directive. Thus, after ARI and CIT complete the representative sample of inspections of those cars under this Revised Directive, FRA will

⁴ See letter to Robert C. Lauby, FRA, from Jason F. Huette, Southwest Rail Industries (Oct. 31, 2016) (asserting Directive is "burdensome" on ARI and industry as a whole).

compare those inspection results with the inspection results of CIT and ARI's voluntary inspections. FRA will then determine whether the remaining previously examined tank cars should be exempted from the Revised Directive.

FRA agrees with ARI and ACF's concerns about the requirement to inspect out-of-service cars within 24 months, so FRA is removing the requirement to inspect tank cars not currently in hazardous materials service and the scope of the inspection and test requirement. This requirement now applies to 15% of tank cars currently in hazardous materials service with the highest mileage in each tank car owner's fleet. FRA believes prioritizing inspection of these higher mileage cars, which are more likely to have developed cracks or leaks, will provide the best information regarding the performance and reliability of the affected welds. FRA will monitor and analyze the results of the 15% sample over the next 12 months prior to implementing any additional test and inspection requirements for the remaining fleet of tank cars covered by this Revised Directive.

FRA does not agree, however, with ARI's request to exclude AAR 211 cars from the Directive. FRA believes no evidence exists justifying the exclusion of these cars.

3. Pre-Trip Visual Inspection Record.

ARI requested that FRA revise the requirement for offerors of tank cars to document and submit all pre-trip visual inspection records to the tank car owner. In response to this request, FRA is revising the recordkeeping requirement for the pre-trip inspection to require offerors to maintain the documentation of each visual inspection on-site, but only notify the tank car owner when a defective condition, such as a leak from the BOV/sump/skid area of the car, is detected. FRA agrees the important data from

these pre-trip inspections is whether a defective condition was identified, such as a leak from the BOV/sump or skid area of these cars. Providing notification to the tank car owner for every successful pre-trip visual inspection is an unnecessary burden, and, therefore, FRA is modifying this provision. FRA is, however, requiring offerors to notify FRA and the tank car owner of any leaks identified during the pre-trip visual inspection so FRA, and tank car owners, can monitor ongoing performance and reliability of the cars affected by this Revised Directive.

4. Insufficient Shop Capacity to Perform Required Tests and Inspections Within Timeframe Required.

FRA is modifying the Directive in response to ARI's assertion there is insufficient shop capacity to conduct the inspections and testing the Directive mandates within the timeframes the Directive requires. FRA recognizes the strain the timelines in the Directive may place on existing tank car cleaning, inspection, and repair capacity, but FRA notes that to date, one known hazardous material release has occurred from a car of this design and that release occurred less than 2 years after the car was originally manufactured (8 years prior to its scheduled qualification). Nevertheless, FRA is removing the requirement to test and inspect all covered cars and replacing it with a requirement to test and inspect a 15% sample of covered cars in hazardous materials service with the highest total mileage in each tank car owner's fleet within 12 months of the issuance date of this Revised Directive. In other words, if a tank car owner's fleet consists of 100 covered cars in hazardous materials service, the owner must ensure at least 15 cars (15% of the 100 covered cars in hazardous materials service) are inspected and tested under this Directive and those cars must be the cars with the highest total mileage in the owner's fleet of covered cars. FRA will monitor and analyze the results of

the 15% sample over the next 12 months prior to implementing any additional test and inspection requirements for the remaining fleet of tank cars subject to this Revised Directive.

5. 90% POD Requirement.

In its October 14, 2016, letter, ARI asserted there is a lack of tank car facilities qualified to conduct inspections and tests to the required 90% POD and it could take facilities up to 6 months to become properly qualified. Further, ARI noted the “POD is dependent on the size of the condition or flaw to be found” and “[w]ithout the target condition size information, it is not clear how tank car facilities will be able to create a methodology to satisfy the 90% POD requirement.” ARI also requested clarification whether the 90% POD requirement applies to the entire inspection (surface and volumetric combined) or to each area (volumetric and surface) independently or to each inspection technique used.

FRA is clarifying the required inspection and test methods in response to ARI’s concerns, but FRA believes utilizing a 90% POD is both feasible and necessary given the defects involved. It is important to note the Directive requires the procedure to be verified to 90% POD, as opposed to verifying each individual technician to 90% POD, and that the technicians must receive training on the specific procedure like any other required NDT procedure. FRA believes certifying a procedure to 90% POD is achievable for properly qualified inspectors and expert interpretation given the length of time the industry has had to refine their NDT procedures.⁵

FRA understands ARI has already achieved volumetric NDT procedures with 90% POD for the type and size of defects identified in this Revised Directive.

⁵ 58 FR 48487 (1993).

Therefore, FRA believes ARI's concerns regarding this threshold are without merit. FRA does believe, however, ARI raises a valid technical point and is revising the Directive's inspection procedures to include specific dimensions of weld defects consistent with industry procedures demonstrated to identify surface and volumetric defects at a 90% POD. We are also clarifying the 90% POD applies to surface defects and volumetric defects independently.

6. Digitally Storing Ultrasonic Testing Records.

In its October 14, 2016, letter, ARI asserts "there is no way to physically store" an electronic ultrasonic test. FRA disagrees. FRA believes most ultrasonic testing is done using electronic devices capable of digitally downloading the results of the tests and where devices do not have the capability built in, the same data can be captured and recorded using digital photos and recordings of indications found (e.g., variances from the baseline reading). However, FRA also recognizes requiring digital images of inspections, or portions of inspections, that do not reveal indications is unnecessary and burdensome.

Accordingly, FRA is revising the Directive's requirement to digitally record and maintain the results of ultrasonic testing inspections to clarify digital images (e.g., digital photographs) of indications may be used to meet this requirement. Digital recordings or images are not required to be included in the record of the inspection when the inspection does not produce indications. FRA recognizes digital images or recordings alone are not sufficient, but digital images/recordings with proper records of the equipment used for the testing, the equipment type and settings (e.g., calibration data), and the written procedure used would provide adequate context for digital images or recordings.

7. Potential Shortage of Qualified Inspectors.

ARI expressed concern about a potential shortage of qualified Level II and III certified inspectors available to perform the Directive's required testing and inspection noting that it is not clear how many certified inspectors have been "additionally trained beyond the requirements of Appendix T as mandated by the Directive." Although FRA appreciates the challenge of ensuring a sufficient number of qualified and certified inspectors to carry out the number and types of inspections the Directive requires, FRA notes the Directive does not require training above and beyond Appendix T. NDT technicians are required to be trained on the specific NDT procedure provided by the tank car owner as currently required by Federal regulations for other tank car qualification work. A Level II or Level III qualified NDT technician should already have the technical proficiency in the particular NDT technique and FRA expects only minimal function specific training in the written procedure to be applied to this area of the tank car will be necessary.

8. FRA's Legal Authority to Issue the Directive.

In response to ARI's assertions that some requirements of the Directive may be unlawful and that FRA lacks an objective justification for the Directive, FRA notes that 49 CFR 180.509(b)(4) authorizes it to require the inspection and testing of tank cars outside of the cars' normal qualification intervals "based on the existence of an objectively reasonable and articulable belief that a tank car or a class or design of tank cars **may be in an unsafe operating condition.**" (Emphasis added.) The applicable regulations further define "objectively reasonable and articulable belief" as "a belief based on particularized and identifiable facts that provide an objective basis **to believe or**

suspect that a tank car or a class or design of tank cars may be in an unsafe operating condition.” 49 CFR 180.503 (emphasis added). As outlined in the Directive, FRA inspection and testing of the failed tank car (CTCX 736177) built to the ARI 300 stub sill design identified large slag pockets just below the interior weld surface and extending almost completely through the weld thickness. Inspection of almost 400 additional cars built to this same design found 15% of the cars had the same defects as those identified in CTCX 736177, ranging from ½ inch to 22 inches long and from 1/8 inch to 0.39 inches deep. These defects make the cars noncompliant with Federal regulations and, because of this noncompliance, along with facts of the May 9, 2014, failure of tank car CTCX 736177, FRA reasonably believes or suspects and articulated why the cars may be in an unsafe operating condition.

III. DIRECTIVE

Upon the date of issuance of this Revised Directive, the requirements of RWD No. 2016-01 are revised to require tank car owners to:

1. Identify the railroad tank cars in their fleet manufactured by ARI or ACF to the ARI 300 or ACF 300 stub sill design and equipped with a two-piece cast sump and BOV skid (covered cars) and provide to FRA within 30 days of the issuance of this Revised Directive, the reporting mark and number of (1) all covered cars; (2) all covered cars in the owner’s fleet in hazardous materials service as of the issuance date of this Revised Directive; and (3) of the identified covered cars in hazardous materials service, identify the top 15% of cars with the highest mileage. If 15% of the covered cars in hazardous materials service results in a decimal, then the decimal value must be rounded up (e.g., 15% of 10 tank cars results in a value of 1.5 and thus must be rounded up to 2 tank cars).

a. Before offering a tank car for transportation under the conditions of this Revised Directive, the tank car owner or other offeror of the car, must ensure there is no visible leak from the BOV saddle and sump weld areas, the car complies with all applicable regulatory requirements, and is in a safe condition for transportation.

b. The person performing the inspection must document the inspection and must make the results of the visual inspection available to FRA upon request. If a leak is identified, the results of the inspection must be documented and forwarded to the tank car owner and to FRA via email. Email notifications to FRA must be sent to HMASSIST@DOT.GOV.

2. Inspect and test the sump and BOV skid groove attachment welds as follows:

a. Facilities. All inspections and tests required by this Revised Directive (other than the visual inspection required by paragraph 1 above) must be performed by tank car facilities (defined at 49 CFR 179.2) certified by the AAR consistent with Appendix B of the AAR Tank Car Manual (Tank Car Manual).⁶ (Appendix B provides the requirements for tank car facilities to obtain AAR certification.)

b. Procedures. Due to the subsurface location of the identified slag inclusions and related cracks, volumetric inspection methods (ultrasonic testing), must be used in conjunction with surface inspection methods (e.g., liquid penetrant, magnetic particle or visual inspection) to ensure the welds are completely examined.

i. All NDT, including visual inspection, must be performed consistent with written procedures described in Appendix T, paragraph 1.18 of the Tank Car Manual and approved by an individual qualified and certified as a Level III in the NDT method.

⁶ AAR, Manual of Standards and Recommended Practices, Section C-III, Specifications for Tank Cars (Specification M-1002); Nov. 2014.

(Appendix T provides the requirements for qualification and certification of NDT procedures and personnel for tank cars.)

ii. All surface (liquid penetrant, magnetic particle and visual inspection) methods must be able to detect indications 0.188 (3/16) inches long by 0.016 (1/64) inches wide (maximum values) to a 90% POD. Volumetric NDT methods (e.g., ultrasonic testing (UT)) must be able to detect indications of major dimension 0.188 (3/16) inches by 0.125 (1/8) inches deep (maximum values) to a 90% POD. UT methods and techniques used must allow for clearance around internal attachments adequate to perform longitudinal and transverse wave scanning, including procedures for phased array UT, if used.

c. Personnel. All personnel, including subcontractors, reviewing and approving NDT procedures and reports, including visual inspections, must be qualified and certified to Level II or Level III consistent with Appendix T of the Tank Car Manual and the tank car facility's written practice.

i. In addition to the requirements of Paragraph 2.c., all personnel performing NDT on these welds, and reviewing procedures and reports, including subcontractor personnel, must be trained and tested on the procedures to be used and samples representing the welds to be inspected consistent with 49 CFR part 172, subpart H, and Appendix T of the Tank Car Manual.

d. Acceptance Criteria. Interpretations and evaluations of inspections and tests must comply with Appendix W of the Tank Car Manual.

e. Records. All inspection and test results must be documented, including re-inspections of repairs. The documentation must include the information described in

Appendix T, paragraph 1.20 of the Tank Car Manual including the additional reporting requirements of Appendix T for the applicable NDT methods(s) chosen.

i. A separate record must be completed for each inspection and test performed on each tank car.

ii. The results of UT inspections must be recorded and digital recordings or images of indications (i.e., any variance from the baseline reading) found must be maintained with the inspection and test record.

iii. In addition to the record retention periods required by Chapter 1 of the Tank Car Manual for tank car facilities, the tank car owner must retain all records and documentation required by this Revised Directive for 10 years following the completion of the inspections and tests.

f. Schedule. The inspections and tests required by this Revised Directive must be performed according to the following schedule:

i. Within 12 months of the issuance date of this Revised Directive, 15% of each owner's fleet of covered cars in hazardous materials service with the highest total mileage must be tested and inspected;

ii. Tank car owners must include the results of the inspections and tests required by this Revised Directive in the analysis of their qualification and maintenance program at the intervals required by 49 CFR 180.501 and 180.509;

iii. Within 60 days of the issuance of this Revised Directive, each owner of a tank car subject to this Revised Directive must notify all parties under contract to the car owner, including its lessees and/or sub-lessees, using the cars covered by the Revised

Directive of the terms of this Revised Directive and the inspection and testing schedule;
and

iv. After receiving the notification required by paragraph 2.f.iii, a lessee or other offeror of a tank car subject to this Revised Directive, must document each pre-trip inspection required under paragraph 1 of this Revised Directive.

g. Reports. Owners of tank cars subject to this Revised Directive must report the inspection, test, and repair information to FRA as follows:

i. Tank car reporting mark(s) and number(s) of tank cars in an owner's fleet identified under paragraph 1 of this Revised Directive;

ii. Planned inspection and test schedule for each tank car identified under paragraph 1 of this Revised Directive for inspection (i.e., 15% of the tank car fleet in hazardous materials service with the highest mileage), by reporting mark and number;

iii. Tank car facility (station stencil) that performed the inspection(s) and test(s);

iv. Date(s) the inspection(s) and test(s) were performed;

v. Inspection and test method(s) and procedure number(s) used;

vi. Name(s) of inspector(s) performing the inspection(s) and test(s), level(s) of certification(s), and method(s) certified;

vii. Inspection and test results;

viii. Corrective (repair) action(s) taken; and

ix. The type and date of any accidents, incidents, or releases from the tank car related to the welds that are the subject of this Revised Directive.

The information must be submitted in written hardcopy format or sent electronically to: Larry Strouse, General Engineer, Hazardous Materials Division, Office of Technical Oversight, FRA, 200 West Adams Street, Suite 310, Chicago, Illinois, 60606, (312) 353-6203, email: Larry.Strouse@dot.gov. FRA must receive initial reports within 30 days from the date of issuance of this Revised Directive and subsequent updates every 90 days until a tank owner has met the inspection and testing requirements of paragraph f.1.

h. Repairs. Prior to initiating any repairs, a tank car facility must obtain the tank car owner's written permission and approval of the qualification and maintenance program the tank car facility will use consistent with 49 CFR 180.513 and Appendices D, R, and W of the Tank Car Manual. A tank car facility must report all work performed and all observed damage, deterioration, failed components, or noncompliant parts to the owner under 49 CFR 180.513.

i. Exemption. Notwithstanding the scope of this Revised Directive, FRA may grant relief from this Revised Directive for ACF-manufactured tank cars and/or for tank cars that ARI and CIT voluntarily inspected prior to November 15, 2016, if: (A) a representative sample is inspected consistent with this Revised Directive; (B) the results of the inspections are provided to FRA for review; and (C) the results provide sufficient evidence to warrant FRA exemption of that group of tank cars from this Revised Directive. The required sample sizes to request exemption are as follows:

(A) ACF tank cars manufactured to the ACF 300 design: 125

(B) Cars voluntarily inspected prior to November 15, 2016: 80

FRA will continue to monitor the performance of the tank cars subject to this Revised Directive in hazardous materials service and will take all necessary regulatory or enforcement action to ensure the highest level of safety on the nation's railroads is maintained. Regardless of any entity's compliance with this Revised Directive, FRA reserves the right to seek civil penalties or to take any other appropriate enforcement action for violations of the HMR that have occurred.

IV. Agency Contact for Questions

If you have any questions concerning this Revised Directive, contact Larry Strouse, General Engineer, Hazardous Materials Division, Office of Technical Oversight, FRA, 200 West Adams Street, Suite 310, Chicago, Illinois 60606, (312) 353-6203, Larry.Strouse@dot.gov.

Dated: NOV 18 2016

A handwritten signature in black ink, appearing to read "Robert C. Lauby", is written over a horizontal line.

Robert C. Lauby,
Associate Administrator for Railroad Safety
Chief Safety Officer

Exhibit B

**AMERICAN RAILCAR INDUSTRIES, INC.**

100 Clark Street, St. Charles, Missouri 63301-2075, 636-940-6000
www.americanrailcar.com

December 13, 2016

VIA EMAIL ONLY

Robert C. Lauby
Associate Administrator for Railroad Safety
Chief Safety Officer
Federal Railroad Administration
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590-9898

Re: Federal Railroad Administration ("FRA") Railworthiness Directive ("RWD") No.
2016-01 – Withdrawal of Petition for Reconsideration

Dear Associate Administrator Lauby:

On November 28, 2016, American Railcar Industries, Inc. ("ARI") requested reconsideration regarding the September 30, 2016 FRA RWD No. 2016-01 that was superseded and revised by the Directive issued on November 18, 2016 ("Revised Directive"). A copy of our November 28, 2016 letter is attached. We are formally withdrawing our request for reconsideration. However, we are still pursuing a Petition for Review of the Directive in the United States Court of Appeals. In addition, ARI is not withdrawing its November 28, 2016, request that the FRA immediately stay the Revised Directive without reinstating the Original Directive until the court can rule, nor are we withdrawing the technical and practical compliance concerns raised by the Directive.

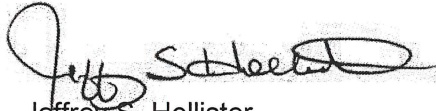
ARI is withdrawing its request for reconsideration because we understand that the Department of Justice may take the position that even though the Directive is "final" and must be complied with immediately, it is not "final" for purposes of seeking judicial review as long as our request that the agency reconsider the Directive is pending with the agency. We do not want to unnecessarily delay court review of the legal issues related to the Directive and therefore have no choice but to withdraw our request for reconsideration. Despite withdrawing our request for reconsideration, we hope you will agree that it is crucially important that ARI and the FRA continue to address the immediate technical and practical compliance concerns arising from the Directive that determine how ARI can achieve compliance.

As you know, the underlying legal issue in this case relates to whether FRA properly exercised its authority under 49 C.F.R. § 180.509(b)(4). The compliance costs associated with the Directive will be significant, especially given the outstanding technical and practical compliance concerns. In addition, it has been over 2 years since the incident that led the FRA to issue the Directive occurred, no other incidents have occurred since then, and available evidence

illustrates that the concerns the FRA has raised do not exist in hundreds of cars that have been inspected since the incident. A reasonable solution, therefore, would be for the FRA to stay the Directive's compliance dates while the legal issue of whether the FRA is even acting within its scope of authority can be decided by a court. We have not received a response from the FRA with respect to our initial request to stay the Directive, and again ask the FRA to immediately stay the Directive.

ARI remains committed to working with the FRA to address the immediate technical and practical compliance concerns raised by the Directive. Given the time constraints imposed by the Directive and the questions that it raises, we expect that the FRA will continue working with ARI to resolve these issues regardless of our decision to pursue judicial review. It is our understanding that your counsel does not object to the continued discussions.

Respectfully,



Jeffrey S. Hollister
President & CEO
American Railcar Industries, Inc.

cc: Karl Alexy
Kurt Eichenlaub
Tom Herrmann
Randy Keltz
Larry Strouse

Pamela Garvie & Barry Hartman, K&L Gates
Sandra Brown, Thompson Hine

**AMERICAN RAILCAR INDUSTRIES, INC.**

100 Clark Street, St. Charles, Missouri 63301-2075, 636-940-6000

www.americanrailcar.com

November 28, 2016

VIA EMAIL ONLY

Robert C. Lauby
Associate Administrator for Railroad Safety
Chief Safety Officer
Federal Railroad Administration
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590-9898

Re: Federal Railroad Administration ("FRA") Railworthiness Directive ("RWD") No.
2016-01 [Revised] — Request for Reconsideration and Rescission or Withdrawal

Dear Associate Administrator Lauby:

The purpose of this letter is to follow up on our letters of October 7, 14, and 27, 2016, and our meeting of October 24, 2016, regarding the September 30, 2016 FRA RWD No. 2016-01 ("Original Directive") and to address the Revised Directive issued on November 18, 2016. Both Directives focus on the issue of potential nonconforming welding practices on certain DOT-111 tank cars built by American Railcar Industries, Inc. ("ARI") and ACF Industries, LLC ("ACF") between 2009 and 2015.

First, thank you for your time and efforts to revise and supersede the Original Directive. We appreciate FRA's recognition of the many concerns with the Original Directive and FRA's work to address those concerns. We strongly support the longstanding cooperative relationship that ARI and the industry has with the FRA since that is the best and most efficient way to ensure railway safety. This communication is vital especially when technical and logistical issues are involved such as the case with these cars.

We have now had the chance to initially digest the Revised Directive. While it addresses some of our operational concerns, serious flaws remain, and in some respects the Revised Directive is more problematic than the Original Directive. We had hoped (and sought) to meet with you before the Revised Directive was issued in order to discuss how the FRA planned to address our concerns. Unfortunately, we were advised that it is not FRA's practice to meet and discuss Directives before they are issued. As a result, this is the first opportunity for us to respond to the Revised Directive and describe the confusion, concern, and uncertainty with respect to its justification, scope, and impact. Given the time frame that we must operate within, we are trying to provide you with as complete a discussion of our concerns as possible, but any concerns not raised here are not waived, and we reserve the right to provide additional information and concerns as they become apparent. Again, we hope you will agree that a meeting would be the best way to proceed.

As you know, when the Original Directive was issued, ARI expressed serious questions regarding why a Directive was the appropriate action to take, but given its terms, we had to immediately undertake extraordinary efforts to prepare for compliance. As a result, when we met with you, we outlined both our fundamental concerns with the need and justification for the Original Directive and the complicated logistics associated with our compliance efforts. Having now labored for almost two months to attempt to comply with the Original Directive, ARI is now faced with the task of doing so again. Rather than make the industry start down the path of determining how to comply with the Revised Directive, which presents some of the same and some new logistical concerns, only to see it potentially revised again, **we respectfully request that the FRA immediately rescind or stay the Revised Directive without reinstating the Original Directive until these issues can be fully reconsidered.** We think that relief is particularly appropriate now because (a) the Revised Directive may not have reached the full regulated community and some may have never been advised by the FRA that it was postponed and has now been superseded, creating serious confusion; and (b) the Revised Directive contains an immediate requirement that within 60 days each owner of the cars covered by the Revised Directive undertake extensive efforts to identify what appear to be over 2,000 cars¹ in the aggregate by using confusing and unclear criteria, and then find, locate, and schedule inspection and testing of those cars and notify the lessees of that schedule.

We also want to advise you that we plan to seek judicial review of and relief from the Revised Directive. Given the statutory provisions governing such review, and how the FRA has chosen to handle this situation, we have no choice but to file immediately to protect our rights. Nonetheless, we prefer to continue to work with the FRA to address our concerns and see no reason why we cannot do so. We continue to believe that the most productive course of action is for us to meet and discuss our concerns with the Revised Directive with the FRA.

The Revised Directive remains problematic and fundamentally flawed in at least four ways. First, the Revised Directive continues to exceed the FRA's authority under its own regulations. We respect and support FRA's authority to act to protect the public health and safety and the environment. However, the FRA has yet to explain the basis for its action as required by 49 C.F.R. § 180.509(b). Contrary to the regulations, the FRA has not provided any particularized facts that show why the nonconforming weld conditions would support an objective and reasonable belief that these cars may be in an unsafe operating condition. The nonconforming weld conditions on the single car that leaked about one gallon² of ethanol two years ago did not result in, nor do they create, any threat of cracks. The undisputed data demonstrates that there is a 1 in 10,000 chance that such a weld condition, even if it does exist on some cars, will result in another small leak. At no time has anyone suggested or provided evidence that the weld conditions in this noncritical

¹ The Directive mandates that a 15% threshold of certain tank cars be identified and sampled, but the criteria for that identification is not clear, as described in this letter, and the exact number will not be known unless the FRA clarifies the terms used in the Directive. Based on our best estimate at this point, we think that over 2,000 cars may be involved in the sampling program and we use that number for ease of reference only.

² The size of the leak in the single car is the estimate contained in PHMSA Incident Report X-2014070004 (May 14, 2014).

area would in any respect create the probability of any sort of catastrophic failure or leak of a tank car.

Second, the Revised Directive imposes unnecessary and new regulatory requirements. While the regulations authorize you to require currently approved inspections and tests outside the normal intervals, they do not authorize the imposition of new, different, and, in some cases, highly controversial and unprecedented substantive requirements absent proper rulemaking under the Administrative Procedure Act ("APA").

Third, as a practical matter the Revised Directive creates more uncertainty and confusion than did the Original Directive. While the FRA appropriately recognizes that, given current capacity constraints, it was impossible to inspect over 14,000 tank cars in the short intervals provided in the Original Directive, the Revised Directive now requires over 2,000 tank cars to be inspected under a similar inappropriate and nonroutine inspection and testing program. Moreover, the Revised Directive creates more uncertainty by creating a precedent for the FRA to decide in the future, again based on no articulated standards, that it might require the remaining, over 12,000, cars to be inspected outside the normal interval as well. Creating such a cloud of uncertainty is unjustified, unnecessary, and harms the industry and its customers for no justifiable reason.

Fourth, the Revised Directive continues to raise serious operational concerns and confusion.

Since the Revised Directive appears to require that over 2,000 tank cars be inspected within the next 12 months, it again mandates that action be undertaken immediately to ensure compliance. This requires that owners of tank cars covered by the Revised Directive redo or substantially change the efforts that were undertaken to prepare for and comply with the Original Directive, and start all over again. As noted above, within the first 60 days each owner of the covered tank cars is required to undertake extensive efforts to identify cars to be tested using confusing and unclear criteria, and then find, locate, and schedule testing of those cars and notify the lessees of such cars of that schedule. While we recognize that the FRA was likely trying to address the timing and shop capacity constraints raised by the industry after the Original Directive was issued the Revised Directive creates additional difficulties that the FRA may not have foreseen without additional input from ARI and/or the industry.

Again, we hope you are willing to meet with us in the very immediate future to address these issues so we can avoid unnecessary costs and efforts.

I. The Revised Directive Exceeds FRA's Authority Under Its Own Regulations

The Original Directive was premised on FRA's assertion that over 14,800 tank cars are so "defective" that they can cause or contribute to an accident that "could result in the loss of tank integrity," or that "*slag and incomplete fusion are not likely to withstand the design stresses and in-train forces they will encounter,*" or that "[a]s a result of nonconforming welding practices, these cars may have substantial weld defects ... potentially affecting each tank's ability to retain its

contents during transportation.” Original Directive at page 1. FRA’s statement at the time was that these conditions resulted in cracks that resulted in the leak and could result in cracks in other cars that created the potential for leaks and thus, the cars may be in an unsafe operating condition within the meaning of 49 C.F.R. § 180.509(b)(4).

In our October 7 and 14, 2016 letters responding to the Original Directive, and in our October 24, 2016 meeting, ARI explained why FRA’s conclusions underlying the Original Directive were incorrect and unsupported by objective facts, and, therefore, why there is no sufficient basis to conclude that the cars in question may be in an unsafe operating condition.³ See October 7, 2016 letter (attaching Summary Report on ARI Tank Cars Built with Sump and Bottom Outlets) and October 4, 2016 letter at pages 4 through 7.⁴ We will not restate all those reasons here, but rather refer you back to those letters and the data that was before the FRA. In brief, we specifically said:

[W]e are not aware of any strength or fatigue analysis that supports this conclusion. As the FRA knows, ARI analyzed this joint using finite element analysis and determined the stresses acting on this weld are low even under the most severe conditions of in-train forces. We also subjected the weld joint to damage tolerance analysis using the AAR fatigue spectra and found that even if the weld conditions were modeled as cracks, they would not grow. *If the FRA has such an analysis that contradicts, or even calls these conclusions into question, it should be disclosed, just as ARI shared its analysis.*

October 14, 2016 letter at page 6 (emphasis added; footnotes omitted). We also pointed out on the slides we provided you at our October 24, 2016 meeting (included as Attachment A to this letter that even if the potential for cracks was removed from consideration, there was at most a 1 in 10,000 probability that weld conditions identified on the one car that leaked, might exist in other cars and might result in a similar leak even without a crack developing. At no time has anyone suggested or provided evidence that the weld conditions would in any respect create the probability of any sort of catastrophic failure or leak of a tank car.

Despite our request, since our meeting, the FRA has not provided any additional data to support its conclusion in the Original Directive. Nor has it provided any data or facts that contradict the data and analysis provided by ARI, all of which demonstrates there are no facts that provide an objective basis for supporting a belief or suspicion that any of these 14,800 tank cars may be

³ We acknowledge that FRA has expressed concerns regarding past welding design and practices and that FRA may have been disappointed in what it viewed as a lack of urgency on our part regarding these issues during the two years that we were working together after the one leak. As the FRA is aware, we have inspected hundreds of cars; we took corrective action and modified our design, fired certain welders, and implemented procedures at our facilities that now follow a higher standard than required under the regulations for these welds. We remain committed to continuing to work with FRA and to inspect and repair any car with a weld condition that does not comply with the applicable standards. Notwithstanding our commitment, we cannot idly allow a Directive that exceeds FRA’s authority.

⁴ All of the information that we understand was before the FRA as it made decisions giving rise to the Original and Revised Directives is listed on Attachment B to this letter. This includes the full report and supporting data of ARI’s Damage Tolerance Analysis. We incorporate all of this by reference into this letter.

in an unsafe operating condition. The fact that one car in thousands slowly leaked about one gallon of ethanol is of course something that needs to be considered. However, no reasonably objective person would conclude that this alone is sufficient to trigger the authority under 49 C.F.R. § 180.509(b) to impose new and unprecedented inspection and testing requirements. This is especially true when the evidence suggests the opposite. No leaks have been found in hundreds of cars that were inspected and that had arguably similar weld conditions, and to our knowledge, no reported leaks of any kind have occurred since 2009 on any of the “high mileage” cars that are the focus of the Revised Directive or any other cars covered by the Revised Directive.

FRA’s regulation authorizes you to require appropriate inspections and tests outside the normal qualification intervals “based on the existence of an **objectively reasonable and articulable belief** that a tank car or a class or design of tank cars **may be in an unsafe operating condition.**” (Emphasis added.) 49 C.F.R. § 180.509(b)(4). The applicable regulations further define “objectively reasonable and articulable belief” as “a belief based on **particularized and identifiable facts that provide an objective basis to believe** or suspect that a tank car or a class or design of tank cars may be in an unsafe operating condition.” 49 C.F.R. § 180.503 (emphasis added). It is unclear at this point what the FRA is relying on as “particularized and identifiable facts” that provide an “objectively reasonable” belief that these 14,800 tank cars may be in an unsafe operating condition.

While the Original Directive suggested that cracks associated with the weld conditions caused the leak, and that the weld conditions found would propagate more cracks, as we explained in our prior letters, the undisputed data demonstrates otherwise.

FRA’s basis for the Revised Directive is contained in three paragraphs:

FRA issued the Directive based on its finding that **as a result of non-conforming welding practices**, DOT-111 tank cars built by American Railcar Industries, Inc. (ARI) and ACF Industries, LLC (ACF) between 2009 and 2015 to the ARI and ACF 300 stub sill design and equipped with a two-piece cast sump and bottom outlet valve (BOV) skid **may be in an unsafe operating condition and could result in the release of hazardous materials.** As a result of non-conforming welding practices, FRA concluded these cars **may have substantial weld defects** at the sump and BOV skid groove attachment welds, potentially affecting each tank’s ability to retain its contents during transportation. Further, FRA found using the tank cars with the **defective welds identified violates the requirements of the Federal Hazardous Materials regulations** (HMR; 49 C.F.R. parts 171-180).¹ A more detailed background discussion is in the Directive.

Revised Directive at page 1. (Emphasis added).

FRA believes **the failure of tank car CTCX 736177, and the defective weld conditions** identified in a large number of ARI- manufactured cars of the same design, **demonstrate the need to ensure all cars built to this particular design are inspected and repaired**, as necessary, as soon as practicable.

Revised Directive at page 5. However, the data submitted to the FRA demonstrates that not a single one of the weld conditions found in about 900 cars covered by the Revised Directive that were inspected prior to November 15, 2016, showed evidence of a leak or crack. We are not aware of any objective facts that support FRA's reach to connect the leak in CTCX 736177 to the conditions in any other car. Such a connection is necessary if FRA is to conclude that those other cars may be in an unsafe operating condition. The same issue was raised in our prior letters and no answer has been received. Without that connection, the Revised Directive is, as explained below, arbitrary, capricious and inconsistent with law.

The three paragraphs in the Revised Directive that purport to discuss FRA's justification say:

In response to ARI's assertions that some requirements of the Directive may be unlawful and that FRA lacks an objective justification for the Directive, FRA notes that 49 C.F.R. 180.509(b)(4) authorizes it to require the inspection and testing of tank cars outside of the cars' normal qualification intervals "based on the existence of an objectively reasonable and articulable belief that a tank car or a class or design of tank cars **may be in an unsafe operating condition.**" (Emphasis added.) The applicable regulations further define "objectively reasonable and articulable belief" as "a belief based on particularized and identifiable facts that provide an objective basis to believe or suspect that a tank car or a class or design of tank cars may be in an unsafe operating condition." 49 C.F.R. 180.503 (emphasis added). As outlined in the Directive, **FRA inspection and testing of the failed tank car (CTCX 736177) built to the ARI 300 stub sill design identified large slag pockets just below the interior weld surface and extending almost completely through the weld thickness.** Inspection of almost 400 additional cars built to this same design found 15% of the cars had **the same defects** as those identified in CTCX 736177, ranging from 1/2 inch to 22 inches long and from 1/8 inch to 0.39 inches deep. **These defects make the cars noncompliant with Federal regulations and, because of this noncompliance, along with facts of the May 9, 2014, failure of tank car CTCX 736177, FRA reasonably believes or suspects and articulated why the cars may be in an unsafe operating condition.**

Revised Directive at pages 10 and 11 (emphasis added).

Thus, in the Revised Directive, with one exception, the FRA no longer references cracks at all. It also does not dispute the data that was submitted to demonstrate that cracks are not the issue. This leads us to conclude that the FRA agrees that actual or potential cracks are not the issue. Curiously, in a single sentence in the Revised Directive, the FRA says that "due to the subsurface location of the identified slag inclusions **and related cracks**, volumetric inspection methods (ultrasonic testing) must be used" Revised Directive at page 12. Again, the FRA has provided no facts — objective or otherwise — to support the premise that cracks were "related" to slag inclusions, that cracks had anything to do with the leak, or that cracks would be propagated from the slag inclusions or weld conditions. The data ARI provided demonstrates quite the

opposite. It is incumbent on the FRA to disclose whatever facts it has that might support its assertion that there are cracks related to the nonconforming weld conditions.⁵

The last sentence quoted above appears to reflect FRA's ultimate conclusion: "These defects make the cars noncompliant with Federal regulations and, because of this noncompliance, along with facts of the May 9, 2014, failure of tank car CTCX 736177, FRA reasonably believes or suspects and articulated why the cars may be in an unsafe operating condition." Revised Directive at page 11 (emphasis added).

Apart from not specifying what specific violation it is referring to, the fact that irregular weld conditions may constitute a violation of a regulation⁶ is not in and of itself grounds to conclude that up to 14,800 cars may be in an "unsafe operating condition" and thus mandate massive new inspections and testing, if for no other reason than technical violations standing alone do not amount to "particularized and identifiable facts." What facts relating to the May 9, 2014, one gallon leak from CTCX 736177 support FRA's claim that it has an objectively reasonable belief that up to 14,800 cars may be in an unsafe operating condition? If it is referring to nonconforming weld conditions or welding irregularities, the FRA is well aware that no tank car in the industry has perfect welds and that *de minimis* weld conditions and slag inclusions exist to some extent on almost every tank car in the industry, especially in noncritical weld areas that are not subject to enhanced inspection techniques (such as UT or x-rays) under current AAR standards during the tank car manufacturing process. As explained in our prior submissions, ARI's data developed while inspecting and analyzing these specific cars demonstrates that there is at most a 1 in 10,000 probability that the welding irregularities in CTCX 736177 that led to the seepage and one gallon leak are likely to occur again and result in another minor leak. There is no evidence that the weld conditions would increase the chances that a crack could occur or that they constitute a weakness or other condition that would create the probability of any sort of catastrophic failure or leak of a tank car.

Nonetheless, the Revised Directive (like the Original) requires additional inspections and new testing requirements to identify potential cracks unrelated to the one gallon leak and to find weld conditions that have a 1 in 10,000 likelihood of allowing another one gallon leak to occur. While the highlighted statement above might be an articulation of FRA's belief, it does not contain "*particularized and identifiable facts that provide an objective basis to believe or suspect that these tank cars may be in an unsafe operating condition.*" The FRA's basis for the Revised Directive is also unclear because it focuses on the initial inspection of "high mileage cars in hazardous materials service," even though CTCX 736177 would not have been included in these inspections because it is not a "high mileage" car.

⁵See ARI Ultrasonic Test Report for Car SHPX213961 and related email correspondence dated June 2016 and ARI Ultrasonic Test Report for Car SHBX213888 and related email correspondence relating to June 2016 inspection.

⁶ At no time has the FRA cited specifically what regulation has been violated other than to refer generally to 49 C.F.R. § 179.200-10 in the Revised Directive, and Appendix W and welding procedures in the Original, and now superseded, Directive. No regulatory violation was ever cited by the FRA, nor was this mentioned during the two years leading up to the issuance of the Original or Revised Directive.

Finally, the FRA has not explained why it did not use or was rejecting the data and analysis provided by ARI. The FRA is obligated, when undertaking action like this, to render a decision that is consistent with applicable law, including the APA. See 5 U.S.C. § 553; *see also Am. Hosp. Ass'n v. Bowen*, 834 F.2d 1037, 1044 (D.C. Cir. 1987) (stating that agencies must comply with Section 553 “prior to a rule's promulgation, amendment, modification, or repeal”). That means the decision must be supported by the record before the agency when it rendered its decision and that there must be a rational connection between the facts found and the conclusions reached. See *Bowen v. Am. Hosp. Ass'n*, 476 U.S. 610, 626 (1986) (“It is an axiom of administrative law that an agency's explanation of the basis for its decision must include ‘a ‘rational connection between the facts found and the choice made.’”); *Los Angeles v. Shalala*, 192 F.3d 1005, 1021 (If an agency “failed to provide a reasoned explanation, or where the record belies the agency’s conclusion, [the court] must undo its action.”). The agency is also required to provide a rational explanation as to why it chose not to accept or consider data and evidence submitted by interested parties. See *Cooper Hosp. v. Burwell*, — F. Supp. 3d —, 2016 WL 1436646 (D.D.C. Apr. 11, 2016) (“The requirement that agency action not be arbitrary or capricious also includes a requirement that the agency respond to ‘relevant’ and ‘significant’ public comments.”). There is nothing in the record of this decision that provides the level and kind of evidence legally required before the FRA may impose inspection and testing requirements under 49 C.F.R. § 180.509(b)(4). Nor has the FRA explained why it declined to consider ARI’s data that demonstrated there is no basis for invoking that regulatory power.

II. The Revised Directive Imposes New Regulatory Requirements that Do Not Exist under Current Law or Regulation, and May Not Be Imposed Absent Proper Rulemaking under the APA.

The regulations authorize the FRA to require appropriate inspection and testing outside normal intervals. They do not authorize the FRA to require new or different inspection or testing beyond what the regulations currently deem to be appropriate. Thus, to the extent the Revised Directive purports to require different or new inspections or testing not contained anywhere in existing regulations (such as the probability of detection (“POD”) requirement discussed below), unilaterally imposing such requirements without notice and comment rulemaking are beyond FRA’s authority and violate the APA.

In addition, FRA regulations permit it to use its authority to require inspections and testing outside the normal qualification intervals “based on the existence of an **objectively reasonable and articulable belief** that a tank car or a class or design of tank cars **may be in an unsafe operating condition.**” 49 C.F.R. § 180.509(b)(4). The Revised Directive has disregarded this regulatory requirement — it is requiring inspections of over 2,000 cars outside the normal intervals without the requisite finding, and then may require further inspections without any standard governing that decision-making or without being based on determinations under 49 C.F.R. § 180.509(b)(4) that must be made before the inspections are required.

Third, as we raised in our previous submissions, the requirement that owners of tank cars covered by the Revised Directive inspect tank cars using a POD of 90%, Revised Directive at page 13, may not be imposed without first following the notice and comment requirements of the

APA. This is explained at length in our October 14 letter at pages 7 through 9. None of these concerns have been addressed by the FRA. Current regulations require only that a tank car facility must have procedures that include the “sensitivity and reliability” of the test technique utilized. See 49 C.F.R. §179.7(b)(10). There is no quantitative POD requirement under current regulations. The FRA did not explain why a POD standard, much less a 90% standard, was necessary in either the Original or Revised Directive. Moreover, the FRA is well aware of and has participated in the debate with owners, shippers, AAR, and other various industry groups concerning the POD methodology. To mandate a POD standard by fiat is not only illegal but also undermines the years of discussion and analyses and debate that has surrounded it. Among other things, the cost of performing a valid POD for each specific procedure and ensuring the technicians utilized meet this capability is significant. If this requirement is applied on a broader industry basis going forward, the costs will likely become significant and even uneconomical.⁷

Finally, as we also explained in our prior submissions, the FRA lacks the legal authority under 49 C.F.R. § 180.509(b)(4) to impose new or different inspection and testing requirements than exist under current law. The regulation authorizes you to mandate inspection and testing without regard to compliance date requirements if certain conditions are met. That means you can authorize the same inspection or testing at more frequent intervals. It does not authorize you to create new or different inspection or testing requirements.

III. The Revised Directive Contains Inappropriate, Vague, and Open-ended Future Obligations for the Industry

The Revised Directive appears on its face to address some of the practical concerns raised by the Original Directive that required thousands of cars to be inspected in a span of 12 months. The problem is that the Revised Directive in large part allows inspection of over 2,000 cars in the first year, and reserves to the FRA the unbridled discretion to require the same inspection and testing of the remaining cars (over 12,000 cars), but leaves unclear whether, why, when, or how those cars might have to be inspected and tested.

The most glaring example of this is the initial requirement that tank car owners must identify 15% of its cars for testing. The Revised Directive first requires that car owners identify covered cars, which likely exceed 14,000.⁸ It then requires that owners of tank cars covered by the Revised Directive identify the 15% of those cars “currently” in “hazardous materials service.” Revised Directive at page 7. Later it refers to cars “in hazardous materials service” but omits the “currently” term. Revised Directive at pages 6 and 11. While this may sound simple, it actually raises a host of specific questions to even identify which 15% of the cars are to be sampled, including the following:

⁷ This 90% POD standard is different than originally proposed, but neither formulation is required by current regulations or justified by the FRA.

⁸ Because the criteria for identifying cars to be sampled are unclear, the number of cars not sampled also cannot be precisely identified.

- How does the term “in hazardous material service” or “currently in hazardous material service” relate to cars that are in storage? Which meaning of “storage” should be used?
- Does it include cars that are not currently in service because they are being repaired? Does it apply to cars that are in storage yards, or in storage areas of loading yards, that have not been used for a given length of time, such as 2 months?
- Does it include cars that are idle at loading and unloading facilities? For how long must they be idle to no longer be in service?
- Is a rail car “in use” if it has not had a recorded loaded move for 60 days?
- May the “80 reinspection cars” and the ACF cars be included in the 15% sample, or are they considered separately?
- Can cars that have been inspected and returned to service as part of the 15% group, the reinspection group, or the ACF group, be removed from the documentation requirements of Revised Directive 1.(b)?

As the FRA is aware, the term “storage” is used differently by different segments of the industry.⁹ How, under these circumstances, are owners of tank cars covered by the Revised Directive to decide which cars are “currently in service”?¹⁰

Beyond this threshold issue, it is unclear what happens after cars are inspected. There is no specificity as to what the protocol will be for the evaluation of the required 15% car sample, the 80 reinspections of the previously inspected cars, the 125 ACF cars, or what the documentation requirements will be for the person offering the car for transportation. What constitutes “results provide sufficient evidence to warrant FRA exemption” for the 125 tank cars manufactured by ACF that are to be inspected? What constitutes the same for the 80 previously inspected cars that are to be reinspected and for the inspection of the 15% sample? There are no criteria in the Revised Directive explaining what inspection results would result in the exemption of the ACF cars and the previously inspected cars from further testing under the Revised Directive. Similarly, there are no criteria for determining what, if any, additional test and inspection requirements will be imposed on the remaining 85% cars. In addition, there are no criteria to remove a car from the documentation requirements prior to offering a car for transportation. The regulated community must be given notice of what is required. Otherwise, the FRA is placing a cloud over the industry and its business transactions, as well as all those who use and rely on these tank cars.

⁹ Railinc, for example, considers cars in a storage yard to be in storage, whereas the AAR considers cars that are idle for 60 days to be in storage. Such differences could result in significant variations regarding what “in use” or “in current use” might mean.

¹⁰ The FRA’s decision to focus on cars with “high mileage” is curious because the car with the one gallon leak would not have been in the top 15% by mileage and, under the Revised Directive, would not be tested.

IV. There are Numerous Technical Issues and Obligations Included in the Revised Directive that are Unnecessary, Confusing, and Inappropriate.

1. Pre-Trip Visual Inspection Record. ARI recommended that the FRA remove the requirement in the Original Directive that the inspection of the BOV and sump area for each individual pre-trip inspection be documented and sent to car owners even if no leak was found, because the visual inspection and documentation of any issues found are already required under current regulations when an issue is identified. See 49 C.F.R. § 173.31(d). The FRA simply modified it to require that, in the case when no leak is identified by the pre-trip inspection, offerors are permitted to maintain the documentation onsite rather than submitting it to the tank car owner. Revised Directive at page 12. But the documentation requirement for each inspection itself is the issue, not just the burden of sending in that documentation as required in the Original Directive. The pre-trip inspection process is already a requirement and the regulations already address documentation and reporting of a leaking car. Furthermore, the Revised Directive does not address when the required documentation will cease.

a. This new document requirement appears to apply to all cars covered by the Revised Directive. That means there must be a separate and individually documented inspection report prepared every time each of almost 15,000 tank car is loaded, even when the inspection reveals no leaks. Loading facilities are presumably complying with the existing regulations that include a pre-offer inspection regardless of whether a car is subject to the Revised Directive. Separate documentation is not required for each inspection when no questionable conditions are found. It is unclear why the FRA is requiring separate documentation for each tank car inspected and especially for cars when no leaks are found.

b. The Revised Directive is vague regarding what the visual inspection is supposed to look for. It says “defects, such as leaks,” but does not specify what the term “defect” means. The implication of the Revised Directive is that any observed imperfection or “indication” must be documented.

c. Under current regulations, a car cannot be shipped if it is found leaking. Further, repair must be effected and if movement without repair is necessary, then a One Time Move Approval (“OTMA”) is required. Current regulations provide the FRA with clear and extensive documentation. See 49 C.F.R. § 180.517. If a car is found leaking, then the offeror is still required to notify the car owner and the FRA. Since current regulations already require them to do so, it is unclear why the FRA is requiring even more documentation of cars that are not leaking.

d. This individual pre-trip tank car documentation requirement appears to be never ending. Revised Directive at page 12. Even a car that is subject to the full inspection and testing under the Revised Directive (15% sampling, reinspection, or ACF sampling) would still be required to have each subsequent pre-trip inspection fully documented. It is unclear whether the FRA is planning to notify the car owner that the tank car can be removed from the pre-trip inspection requirement after a car is subjected to the full inspection and testing under the Revised Directive. If not, this requirement is unduly burdensome.

2. Records of UT inspections. This particular recordkeeping requirement demonstrates the additional burden that will exist for the ultrasonic inspections. The Revised Directive provides: "The results of the UT inspections must be recorded and digital recordings or images of indications ... found must be maintained with the inspection and test record." Revised Directive at page 14. This requirement is unrealistic and without practical benefit. When a UT scan is performed, the area must be slowly and methodically evaluated. For example, inspecting a length of weld 25 inches in length using a 1-inch wide transducer with a 10% overlap requirement would require at least 28 different areas of evaluation. Normally, the inspector slowly but continually moves the transducer over the area, stopping only if a condition is observed. Under the Revised Directive, the inspector must now stop to record each of the 28 images when some "indication," regardless of how minor, is observed, take a photo of it, and record the location (the UT image does not show it), then upload these images to a server, and place them in a file or report. It is unclear what, if any, benefit this requirement serves when the industry has been using reporting requirements as dictated by Appendix T. This means that if a relevant indication is found current regulations specify the documentation.

3. Nondestructive Training ("NDT"). The Revised Directive contradicts itself regarding NDT training requirements. On page 8 of the Preamble, it states "technicians must receive training on the specific procedure **like any other required NDT procedure.**" Then varying from this, on page 10 of the Preamble, the Revised Directive states: "A Level II or Level III qualified NDT technician **should already have the technical proficiency** in the particular NDT technique and FRA expects only **minimal function specific training in the written procedure to be applied to this area** of the tank car will be necessary." On page 13 of the Revised Directive, it further deviates from the statement on page 8 by stating: "All personnel performing NDT on these welds, and reviewing procedures and reports, including subcontractor personnel, **must be trained and tested on the procedures to be used and samples representing the welds** to be inspected consistent with 49 C.F.R. part 172" (emphasis added). Under the current industry practice, the NDT Level III determines whether a Level II technician requires additional training. This Revised Directive, with no justification, removes the discretion bestowed upon the Level III under current regulation to determine testing requirements.

4. Flaw Sizes to be Detected. The Revised Directive provides that all surface methods "must be able to detect indications 0.188 (3/16) inches long by 0.016 (1/64) inches wide (maximum values) to a 90% POD." Revised Directive at page 13. There is nothing in the record of this decision that explains why the FRA picked this size flaw. Why 0.016 inches instead of 0.020 inches? The FRA may not arbitrarily impose these specific requirements without some rational basis, in the record, for doing so.

5. UT Equipment. The Revised Directive states: "FRA believes most ultrasonic testing is done using electronic devices capable of digitally downloading the results of the tests..." Revised Directive at page 9. The FRA has no factual basis for this requirement. In fact, the FRA should be well aware from working with ARI on this matter that none of the ultrasonic flaw detector units utilized by ARI have this capability.

6. Prior or Current Inspections. The Revised Directive fails to account for the fact that approximately 900 cars have already been fully inspected. There is no reason to ignore these cars or this effort. All of these tank cars were inspected utilizing procedures similar to those contained in the Revised Directive. Will the FRA allow the inspection of those cars that meet the mileage threshold to be counted toward the 15% that must be inspected?

7. Number of Surface Inspections. The Revised Directive provides on page 13 that: "All surface (liquid penetrant, magnetic particle and visual inspection) methods must be able to detect indications ... to a 90% POD." If a surface inspection technique has a 90% POD, it is unclear whether an additional test technique such as dye penetrant or magnetic particle is not required. In the past, FRA officials have stated that two surface methods must be used independently. It should be made clear that if agreement is reached on a visual test method, then no additional visual test will be required.

8. Editorial Correction. On page 11 of the Revised Directive's Preamble, on the 6th line, the word "same" should be changed to "similar" so it reads: "15% of the cars had similar defects as those identified in CTCX 736177...."

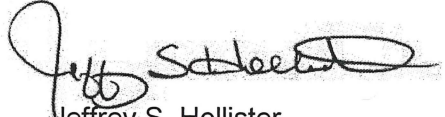
9. Clarification. On page 15 of the Revised Directive, it requires that reports address the "Corrective (repair) action(s) taken"; however, it is not clear as to what level of detail is required in the report. Typically, the report would specify that something similar to "All indications were repaired by welding" or "All indications were repaired by welding in accordance with Appendix R." It is unclear whether the FRA is looking for repair procedures to be identified in more detail than what is currently required. Currently, the report will state either "No repairs required", or "Repairs performed by welding in accordance with Appendix R," and the shop repair records have the requisite repair detail. The FRA needs to confirm whether current practice remains acceptable.

As we stated at the outset, ARI recognizes that any condition regardless of size needs to be attended to if it results in a leak. We also appreciate you and your staff's willingness to meet with us about the Original Directive and address some of the serious issues it presented. We explained at the time why we thought the factual and legal basis for the Directive was flawed, and that no such Directive or action under 49 C.F.R. § 180.509(b)(4) was necessary or appropriate to address the single tank car leak. We had hoped that the FRA would consider an approach to this that did not involve the assertion of authority under this regulation. We have consistently noted our willingness to take action within the normal testing and inspection routines to attend to the concerns that this tank car leak presented to ensure that those conditions were discovered and eliminated. Indeed, we had offered to voluntarily inspect every car at its regular interval using UT techniques.

The Revised Directive presents some of the same issues and some more challenging ones. Ultimately and with respect, the conditions that authorize the FRA to impose additional inspection and testing requirements under applicable law and regulations do not exist here. While reserving all of our rights to seek a remedy, we remain willing to work with the FRA on this important issue and look forward to doing so at your earliest convenience. We again request that

the Revised Directive be rescinded or stayed in the interim without reinstating the Original Directive.

Respectfully,

A handwritten signature in black ink, appearing to read "Jeff S. Hollister", written over a light gray rectangular background.

Jeffrey S. Hollister
President & CEO
American Railcar Industries, Inc.

Attachments: PowerPoint
List of Documents

cc: Karl Alexy
Kurt Eichenlaub
Tom Herrmann
Randy Keltz
Larry Strouse

Pamela Garvie & Barry Hartman, K&L Gates
Sandra Brown, Thompson Hine

Attachment A to Letter of November 28, 2016

(Power Points Slides Provided to FRA at Oct. 24, 2016 meeting)



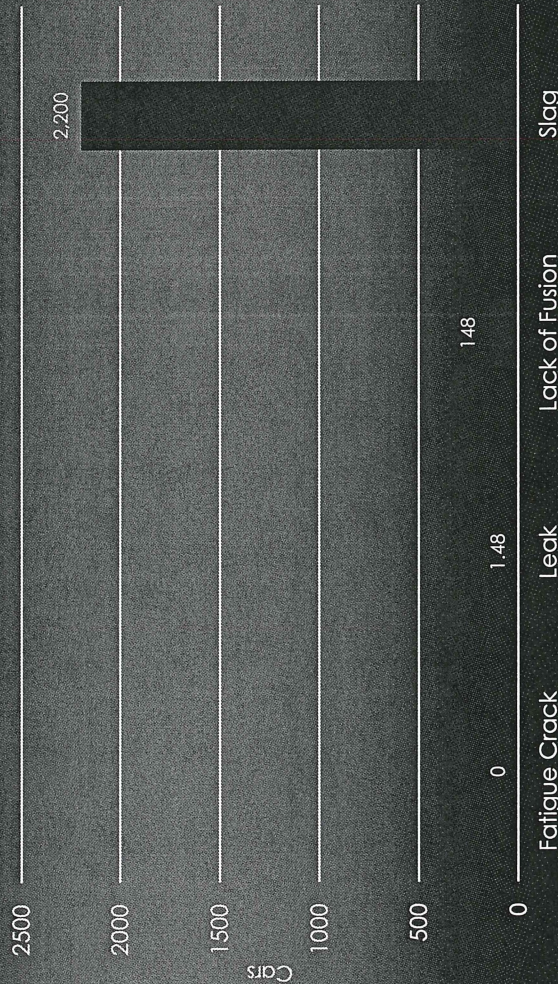
Concerns Regarding the Need for the Directive

1 in 10,000 Chance of a Tank Leak

Only 1 car in 14,800 has leaked

- All others have been in service from 2009-2016 without incident

2,200



Statistically Valid Sample of over 700 cars inspected:

- No leaks, No cracks
- 1 in 10,000 Chance of Leak
- 1 in 100 Chance of Finding Lack of Fusion
- 15% Chance of Finding Weld Slag but 80% of these are < 1/8" in depth

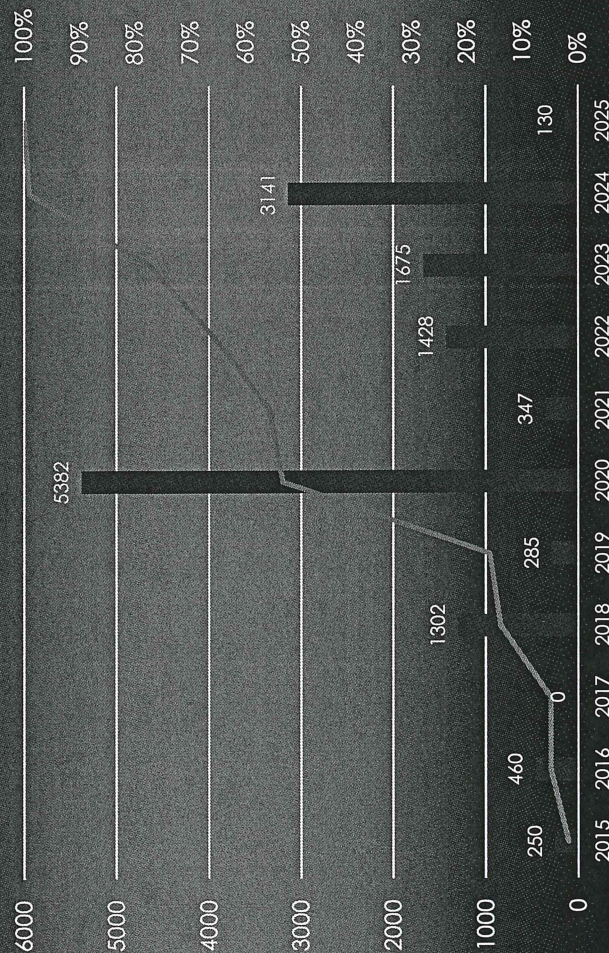
Non-Critical Tank Weld

- 2 1/2 times over-strength
- No fatigue crack growth
- Visual, hydro & air inspected at time of build



Inspect & Repair if Needed at the Next Shopping Event

Timeline Based on Next Shopping Event



Inspect Cars at Next Shopping Event

- 10 year requalification cycle
- Reassignment
- Bad Order
- Mandated Retrofit

Over 50% will be inspected by 2020

Based on the sample:

- 12,580 cars (85%) will be found to have no weld flaws.
- Why would we clog available repair capacity with cars needing no repair?

If inspections reveal greater risk than what was found during the sample, speed up the pace of inspections.



Technical Requirements of the Directive

Directive imposes unattainable standards for inspection:

- 90% POD¹ for Visual & UT using the Appendix W flaw sizes is unattainable
- 90% POD has never been applied in the rail car industry under any regulation and it is unnecessary for this non-critical weld joint
- No shops are currently qualified to inspect to the 90% POD standard

In order to inspect these tank cars in a reasonable period of time:

- Use existing UT methodology that has been demonstrated to find significant size flaws
- We are willing to work with the FRA alongside other industry participants to develop an entirely new procedure
- But within the timeline of the directive, it is impossible to develop the new procedure and inspect all the cars.

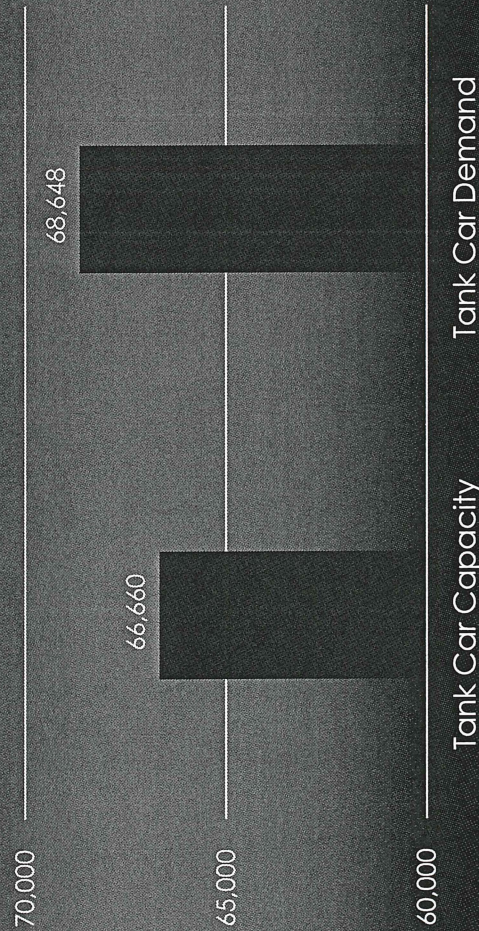
1. Probability of Detection (POD)

- The % chance of finding X
- % chance goes down as X gets smaller



Capacity Concerns

Demand Exceeds 2017 Repair Capacity



Tank Car Shop Capacity is Already Being Utilized for:

- Bad Orders
- Reassignment
- Qualification
- Upgrades
- Retrofit

Even without POD requirements, it is inconceivable that the inspection program could be completed

- 6 months to develop procedures and train technicians
- No outside shop participation as of now
- Feedback from industry is there is concern with requirements and scope and may not be willing to participate
- Cars need to be released, moved, cleaned before inspection
- 12,580 cars (85%) are expected to have welds in full compliance



Recommendations

- Delay the implementation date by 30 days to address the technical & administrative problems raised by us and the industry
- Accept all 700 cars already inspected as being compliant with the directive
- Inspect cars at their next shopping event
- Utilize the currently accepted industry inspection methodology
- Exclude from the directive:
 - ACF built cars
 - AAR 211 cars
- Remove the 24 month requirement to inspect cars in storage
 - Inspect the cars before they enter into service
- Remove the requirement to document pre-trip inspections since visual inspection is already required under regulation.

Attachment B to Letter of November 28, 2016

**Documents and Correspondence Related to Federal Railroad Administration (FRA)
Railworthiness Directive (RWD) 2016-01***

FRA Inspection Reports

1. Inspection Report by Lawrence Strouse, General Engineer, Hazardous Materials Division, Office of Technical Oversight, Report No. 8, regarding CTCX 736177 (February 16, 2015)

Data and Analysis

1. ARI Inspection Report for CTCX 736177 by Gary Hazelwood (October 27, 2014)
2. Damage Tolerance Analysis of ARI Tank Cars built with a Sump and Bottom Outlets, 2009-2015 (September 8, 2016)
3. ESI Investigative Report, ESI Project 47575A, Inspection of Welded Areas on Section from CTCX 736177 (March 27, 2015)
4. CIT letter to Lawrence Strouse regarding Root Cause Report of Leaking Sump to Tank Weld on CTCX 736177 (April 3, 2015)
5. Fatigue Crack Growth Analysis of Sump Weld (April 14, 2016 15:45:46)
6. Fatigue Crack Growth Analysis of Sump Weld (April 14, 2016 15:19:43)
7. Fatigue Crack Growth Analysis of Sump Weld (September 7, 2016 10:38:36)
8. ARI Report 1601, Summary Report on ARI Tank Cars built with Sump and Bottom Outlets, 2009-2015 (October 7, 2016)
9. Engineering Drawing 5-Y-5939 FIT ARRGT 2 IN DROP
10. Engineering Drawing 7-Y-9802-00 MODIFICATION ASSY FIT ARRGT

ARI Correspondence with FRA

1. Email from Larry Strouse (FRA) to Glenn Sandheinrich and Roger Dalske (ARI) regarding reliability and POD, referencing attachment of Agenda Background from October 16-17, 2002 Tank Car Committee Meeting in St. Louis, MO (January 4, 2016)
2. Email from Larry Strouse (FRA) to Glenn Sandheinrich and Roger Dalske (ARI) regarding reliability and POD (March 11, 2016)

* The foregoing list is not intended to be a complete list of the record that was before the agency for purposes of judicial review. Rather, it reflects ARI's current understanding of what may have been before the agency.

3. Email from Glenn Sandheinrich (ARI) to Larry Strouse (FRA) regarding questions on FRA RWD 2016-01 (October 3, 2016)
4. Email from Larry Strouse (FRA) to Glenn Sandheinrich (ARI) responding to questions on FRA RWD 2016-01 (October 4, 2016)
5. Email from Glenn Sandheinrich (ARI) to Larry Strouse (FRA) regarding FRA RWD 2016-01 (October 7, 2016)
6. ARI letter to Larry Strouse (FRA) regarding FRA RWD 2016-01 (October 7, 2016)
7. ACF letter to Robert C. Lauby, Associate Administrator for Railroad Safety and Chief Safety Officer, regarding FRA RWD 2016-01 (October 13, 2016)
8. ARI letter to Robert C. Lauby and Larry Strouse (FRA) regarding FRA RWD 2016-01 (October 14, 2016)
9. ARI letter to Robert C. Lauby (FRA) regarding FRA RWD 2016-01 (October 27, 2016)
10. Email from Kurt Eichenlaub, Acting Staff Director, Hazardous Materials Division, to Jeff Hollister, Glenn Sandheinrich, Michael Williams, Yevgeny Funder, and Andrew Langham (ARI) regarding advance notice of 30-day extension for FRA RWD 2016-01 (October 27, 2016)
11. Email from Jeff Hollister (ARI) to Kurt Eichenlaub, Acting Staff Director, Hazardous Materials Division, as well as Glenn Sandheinrich, Michael Williams, Yevgeny Funder, and Andrew Langham (ARI) regarding advance notice of 30-day extension for FRA RWD 2016-01 (October 27, 2016).
12. Email from Jeff Hollister (ARI) to Larry Strouse, Kurt Eichenlaub, Randy Keltz, John Alexy, and Kurt Hastings (FRA) regarding FRA RWD 2016-01 (November 1, 2016)
13. Email from Michael Williams to Jeff Hollister (ARI) regarding ARI explanation of source of leak on CTCX 736177 (attached to email from Jeff Hollister (ARI) to Larry Strouse (FRA) on November 1, 2016)
14. Email from Randy Keltz (FRA) to Keith Cozza and Jeff Hollister (ARI) regarding revised FRA RWD 2016-01 (November 18, 2016)

ARI Materials Provided to the FRA at the October 24, 2016 Meeting

1. Agenda
2. Slides addressing concerns with FRA RWD 2016-01

Materials Provided by the FRA at October 24, 2016 meeting

1. Table of Cars to Be Inspected at ARI Shops
2. ARI Ultrasonic Test Report for Car SHPX 211862 (March 29, 2016)
3. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211862 (March 29, 2016)
4. ARI Ultrasonic Test Report for Car SHPX 211833 (March 29, 2016)
5. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211833 (March 29, 2016)
6. ARI Ultrasonic Test Report for Car SHPX 211862 (March 29, 2016)
7. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211862 (March 29, 2016)
8. ARI Ultrasonic Test Report for Car SHPX 211875 (March 29, 2016)
9. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211875 (March 29, 2016)
10. ARI Ultrasonic Test Report for Car SHPX 211963 (March 29, 2016)
11. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211963 (March 29, 2016)
12. ARI Ultrasonic Test Report for Car SHPX 211985 (March 29, 2016)
13. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211985 (March 29, 2016)
14. ARI Ultrasonic Test Report for Car SHPX 211990 (March 29, 2016)
15. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 211990 (March 29, 2016)
16. ARI Ultrasonic Test Report for Car SHPX 212015 (March 29, 2016)
17. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 212015 (March 29, 2016)
18. ARI Ultrasonic Test Report for Car SHPX 212036 (March 29, 2016)
19. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 212036 (March 29, 2016)
20. ARI Ultrasonic Test Report for Car SHPX 212217 (March 29, 2016)
21. Confined Space Pre-Entry Evaluation Checklist for Car SHPX 212217 (March 29, 2016)
22. ARI Ultrasonic Test Report for Car SHPX 213888 (May 26, 2016)
23. ARI Ultrasonic Test Report for Car SHPX 213961 (May 26, 2016)

24. Email from Roger Dalske (ARI) to Cynthia Kunz and Glenn Sandheinrich regarding BOV Saddle and Sump Initial Inspection (June 29, 2016)
25. Emails between Ty Bagwill (Eagle Railcar) and Roger Dalske (ARI) regarding BOV Saddle and Sump Initial Inspection (June 29, 2016)
26. ARI Ultrasonic Test Report for Car SHPX 211862 (July 22, 2016)

ARI Materials Developed in Response to RWD 2016-01

1. FRA RWD No. 2016-01 Examination and Documentation Prior to Shipping Form
2. Decal – RWD Compliance
3. Summary of Cars Affected by FRA RWD 2016-01 by Customer and Builder